Paper No.22



UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

***Ex parte*** GERARD GHAUVEL, FRANCIS AUSSEDAT, and PIERRE CALIPPE

Appeal No. 2003-1929
Application No. 09/606,057

ON BRIEF

Before FLEMING, GROSS, and DIXON, ***Administrative Patent Judges***.
GROSS, ***Administrative Patent Judge***.

***DECISION ON APPEAL***

This is a decision on appeal from the examiner's final rejection of claims 6, 8, 10 and 12 through 21, which are all of the claims pending in this application.

Appellants' invention relates to a processor architecture of a cellular radio system where a protocol processor is used to handle simple tasks that are usually performed by the main processor. Having a separate protocol processor handle these simple tasks unburdens the main processor (see specification, pages 2 and 4). Claim 6 is illustrative of the claimed invention, and it reads as follows:

6. A cellular radio, comprising:

a first processor, said first processor being the main processor of the cellular radio;

a second processor coupled to said first processor, said second processor performing protocol processing; and

a third processor coupled to said first processor, said third processor performing signal processing on vectors.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

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|---|---|---|
| Paneth et al. (Paneth) | 6,282,180 (effectively filed Mar. 20, 1985) | Aug. 28, 2001 |
| Barnes et al. (Barnes) | 4,829,554 | May 09, 1989 |

Claesson et al., "A multi-DSP implementation of a broad-band adaptive beamformer for use in a hands-free mobile radio telephone,"40 IEEE Transactions on Vehicular Technology no. 1, Part 2, 194-202 (February 1991) (Claesson)

Mano, Computer System Architecture 282-84 (2d ed., Prentice-Hall 1982) (Mano)

Claims 6, 8, 10, 13, 14, 16, 17 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paneth in view of Barnes.

Claims 16 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paneth in view of Barnes and Claesson.

Claims 12, 15, 18, 20 and 21 stand rejected under 35 U.S.C. § 103 as being unpatentable over Paneth in view of Barnes and Mano.

Reference is made to the Examiner's Answer (Paper No. 18, mailed March 11, 2003) for the examiner's complete reasoning in support of the rejections, and to appellants' Brief (Paper No. 17, filed December 27, 2002) and Reply Brief (Paper No. 19, filed May 15, 2003) for the appellants' arguments thereagainst.

***OPINION***

At the outset we note that appellants state on page 4 of the Brief that the claims stand separately. 37 C.F.R. § 1.192(c)(7) (July 1, 2003) as amended at 62 Fed. Reg. 53196 (October 10, 1997), which was controlling at the time of appellants filing the Brief, states:

> For each ground of rejection which appellant contests and which applies to a group of two or more claims, the Board shall select a single claim from the group and shall decide the appeal as to the ground of rejection on the basis of that claim alone unless a statement is included that the claims of the group do not stand or fall together and, in the argument under paragraph (c)(8) of this section, appellant explains why the claims of the group are believed to be separately patentable. ***Merely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable.*** (Emphasis ours)

In the argument section on pages 10-18 of the Brief appellants present arguments regarding the separate patentability of claims 6 and 14 over the combination of Paneth and Barnes. However, for each of claims 8, 10, 13, 16, 17, and 19, appellants (Brief, pages 19-21) merely point out the differences in what the

claims cover, which does not constitute an argument as to separate patentability. Therefore, for the rejection of claims 6, 8, 10, 13, 14, 16, 17, and 19 over Paneth in view of Barnes, we will consider claims 6 and 14 separately, with the dependent claims standing or falling with the independent claims from which they depend.

At pages 21-23 of the Brief, appellants present arguments as to the patentability of claim 16 over Paneth in view of Barnes and Claesson and then repeat those arguments for claim 17. Thus, we will consider claims 16 and 17 together, with claim 16 as representative.

Regarding claims 12, 15, 18, 20 and 21, appellants present arguments at pages 23-28 and 31 of the Brief as to the separate patentability of claim 15. However, appellants at pages 28-32 of the Brief merely point out the additional limitations of claims 12, 18, 20 and 21 without presenting any arguments as to their separate patentability. We will, thereby, consider claims 12, 15, 18, 20 and 21 as a single group with claim 15 being representative for that group.

***Claims 6, 10, 13 and 16***

Appellants argue (Brief, pages 10, 11, and 13 and Reply Brief, pages 2 and 3) that Paneth does not disclose a first

processor that is the main processor of a cellular radio. Specifically, appellants assert (Brief, page 10, and Reply Brief, page 2) that Paneth fails to disclose or suggest that processor 20 is the "**main processor** of the base station or of any cellular radio." We note that appellants have provided no definition of "main processor" or other evidence that would indicate that Paneth's element 20 could not be considered a main processor as recited in representative claim 6.

Further, appellants contend (Brief, pages 11-12) that Barnes likewise fails to teach or disclose a main processor of a cellular radio, as Barnes discloses a cellular mobile telephone system rather than a cellular radio, and a slave microprocessor 558 or sub system microprocessor 550 rather than a main processor plus two other processors. Appellants argue (Brief, pages 12 and 18, and Reply Brief, pages 3-6, 15-16, 20, and 24-25) that even if Barnes teaches a cellular radio system, there is no motivation to combine Paneth with Barnes, and the deficiencies of Paneth are not overcome. We disagree with appellants.

After a careful reading of Paneth we find that, notwithstanding the examiner's statements to the contrary (Answer, page 3), Paneth discloses a cellular radio because Paneth discloses (in the abstract) a "telecommunication system for processing a plurality of simultaneous bidirectional

communications . . . using wireless transmissions over one of a plurality of available RF carrier frequencies," which is, by definition, a cellular telephone and cellular radio. (See attached definition of "cellular telephone" from encyclopedia.com wherein "cellular telephone" and "cellular radio" are considered alternatives for each other.") Thus, the use of Barnes for a teaching of a cellular radio is merely cumulative, and arguments regarding motivation to combine the two references are regarded as being moot.

As to the limitation of a first processor being a "main processor," we consider Paneth's elements 17 and 20 together as shown in Figure 2. Paneth (column 8, lines 54-60) states, "[t]he remote-control processor unit (RPU) **20** is the central control processor which conveys connection data and control messages to the CCU." Appellants assert (Brief, page 13) that the referenced portion of Paneth "does not teach or suggest that RPU 20 is the 'main processor of a cellular radio', as required by Claim 6." However, if appellants' argument is that Paneth fails to teach a cellular radio, we have addressed that argument ***supra***. If appellants, on the other hand, are suggesting that the referenced portion fails to teach that processor 20 is a "main processor," appellants, as explained ***supra***, have failed to explain what distinguishes a main processor from Paneth's processor 20.

Accordingly, elements 17 and 20 together form a first, main processor of the cellular radio system.

Paneth discloses (column 8, lines 21-23) that "[t]he CCU **18** controls the TDMA function and also functions as a link-level protocol processor." Paneth also shows (see Figure 2) processor 18 coupled to elements 17 and 20, the claimed first processor. Therefore, Paneth discloses a second processor performing protocol processing and coupled to the first processor.

Appellants contend (Reply Brief, pages 12-13) that the examiner "points to no teaching in [sic, or] suggestion in Paneth that supports his determination that diversity combiner 33 . . . 'reads on the processor performing signal processor [sic, processing] on vectors limitation on [sic, in] the claim.'" However, Paneth (column 71, lines 42-47, and Figures 2 and 3) teaches a processor 33 positioned between modem 19 and CCU 18 and coupled to elements 17 and 20 (the claimed first processor) through element 18 (the claimed second processor). Further, according to Paneth (column 71, lines 64-67), "[t]he diversity processor reads from the three modems their . . . magnitude and phase error (deviation of the detected phase from the ideal . . . reference vectors)." Thus, we find that Paneth discloses a third processor which performs processing on vectors and which is coupled to the first processor, albeit through the second

does not suggest a direct coupling of the first and third processors. In fact, nothing in representative claim 6 precludes coupling the first and third processors through the second processor. Therefore, we will sustain the obviousness rejection of claims 6, 10, 13 and 16.

***Claims 14, 17, and 19***

Appellants argue (Brief, pages 10-14, and Reply Brief, pages 6-8, 11-12, 16, 19, and 21) that even if Paneth discloses element 20 is a main processor, this processor does not perform management and vocoder signal processing as required by the claims. Appellants assert (Brief, pages 10 and 13) that "the vocoder function is performed by the codecs in VCU 17 - NOT in RPU 20." (We note that appellants appear to revoke this admission when they state on page 19 of the Reply Brief that element 17 "performs NO vocoder signal processing.") However, as indicated ***supra***, Paneth's combination of processors 17 and 20 forms the main processor, and processor 17 of the "main processor" fulfills the function of "sophisticated system management functions and control mechanisms for call setup, teardown, and maintenance" (see column 8, lines 56-60), and "process[es] . . . voice connections" (see column 8, lines 13-

15). Therefore, we will sustain the obviousness rejection of claims 14, 17, and 19.

***Claims 16 and 17***

Appellants (Brief, pages 21-23) contend that Claesson, upon which the examiner relied for a teaching of a DSP processor, is for laboratory environments and, thus, is not a cellular radio. Specifically, appellants state (Brief, page 22) that "[t]here is no evidence whatsoever in Claesson that the DSP900 system is a cellular radio or has cellular radio functionality." Although appellants admit (Brief, page 22) that "Claesson discloses . . . a[n] array that Claesson discloses as being 'intended for use in a hands-free mobile radio telephone,'" appellants assert that Claesson fails to disclose the array in a cellular radio. Appellants conclude (Brief, page 23) that it would not have been obvious "to have re-engineered the DSP900 . . . [to] be a **cellular radio**, . . ., without the improper hindsight provided by Appellants' disclosure." However, as indicated by the excerpt from encyclopedia.com, Claesson's mobile radio telephones are cellular radios. Thus, Claesson's disclosure of the array being intended for a hands-free mobile radio telephone suggests using the array in a cellular radio.

Appellants further argue (Brief, pages 22-23) that the examiner's reason for modifying Paneth to incorporate Claesson's DSP is "supposition not supported by fact." Appellants contend (Brief, pages 22-23, and Reply Brief, pages 18-19) that the reasoning fails to come from the prior art. We disagree. As the examiner points out (Answer, pages 5-6) on page 194, second column, to page 195, first column, Claesson suggests that DSP is used for high performance and keeps total cost reasonable (though it demands more card space and execution speed). Therefore, the examiner has not used impermissible hindsight, and it would have been obvious to use DSP in Paneth's system. Since appellants have presented no further arguments as to the patentability of claims 16 and 17, we will sustain the rejection over Paneth in view of Barnes and Claesson.

***Claims 12, 15, 18, 20 and 21***

Regarding representative claim 15, appellants (Brief, pages 25-27) substantially repeat the arguments presented for claims 6 and 14 (see Brief, pages 10-12), merely adding assertions that Paneth fails to disclose a third processor of the array type. However, the examiner relies upon Mano for this limitation. Appellants argue (Brief, pages 27-28 and 31) that Mano fails to cure the deficiencies of Paneth, Barnes, and the combination

thereof, and that there is no teaching or suggestion in any of the references that would have suggested to the skilled artisan to combine Mano with Paneth and Barnes.

As we have found no shortcomings in the examiner's rejection over Paneth and Barnes, there are no deficiencies that Mano needs to remedy. Regarding a suggestion to combine Mano with Paneth and Barnes for a teaching to use an array type processor as the third processor, Mano states (last paragraph beginning on page 282) that "[a] processor suitable for vector processing is sometimes called an *array* processor. This is because the processor is capable of performing parallel computations on large arrays of data." Thus, Mano suggests that "array processor" is another name for a vector processor. Since we have determined ***supra*** that Paneth's diversity processor 33 is a vector processor, according to Mano, Paneth likewise discloses an array processor. Therefore, arguments as to the combinabililty of Mano with Paneth and Barnes are of no consequence. Accordingly, we will affirm the rejection of claim 15 and the claims grouped therewith, claims 12, 18, 20, and 21.

***CONCLUSION***

The decision of the examiner rejecting claims 6, 8, 10 and 12 through 21 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

***AFFIRMED***

MICHAEL R. FLEMING )
Administrative Patent Judge )
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)
ANITA PELLMAN GROSS ) BOARD OF PATENT
Administrative Patent Judge ) APPEALS
) AND
) INTERFERENCES
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)
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JOSEPH L. DIXON )
Administrative Patent Judge )

APG:clm

Appeal No. 2003-1929
Application No. 09/606,057

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## cellular telephone



Related: **Electrical Engineering**

or cellular radio, telecommunications system in which a portable or mobile radio transmitter and receiver, or "telephone," is linked via **microwave** radio frequencies to base transmitter and receiver stations that connect the user to a conventional telephone network. The geographic region served by a cellular system is subdivided into areas called cells. Each cell has a central base station and two sets of assigned transmission frequencies; one set is used by the base station, and the other by mobile telephones. To prevent radio interference, each cell uses frequencies different from those used by its surrounding cells, but cells sufficiently distant from each other can use the same frequencies. When a mobile telephone leaves one cell and enters another, the telephone call is transferred from one base station and set of transmission frequencies to the next using a computerized switching system. The first cellular telephone system began operation in Tokyo in 1979, and the first U.S. system began operation in 1983 in Chicago. In many countries with inadequate wire-based telephone networks, cellular telephone systems have provided a means of more quickly establishing a national telecommunications network.